

## ABSTRACT

1        This invention is a computer implemented method of  
2 approximating a gray scale tone with a more limited range  
3 image producer. One of a plurality of tone curves is  
4 associated with each pixel of a screening matrix. The plural  
5 tone curves are approximated by a polynomial and the  
6 polynomial coefficients are determined. The polynomial  
7 coefficients are stored in a look-up table. Each pixel of an  
8 image is mapped to a corresponding pixel of the screening  
9 matrix. For each pixel the corresponding polynomial  
10 coefficients approximating the tone curve are recalled and  
11 used to compute a pixel output value from a pixel input value.  
12        The polynomial is preferably of the third degree polynomial  
13 and in a form easily computed using a digital signal processor  
14 with a hardware multiplier and arithmetic logic unit.  
15 Screening in this manner requires less memory storing the  
16 screening data than the prior art pure look-up table  
17 screening.